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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/613,856	07/03/2003	Aryan Saed	ICE-019	2958

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Patent Administrator
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Boston, MA 02110

EXAMINER

MOTTOLA, STEVEN J

ART UNIT	PAPER NUMBER
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2817

DATE MAILED: 09/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

AK

Office Action Summary	Application No.	Applicant(s)	
	10/613,856	SAED, ARYAN	
	Examiner	Art Unit	
	Steven J. Mottola	2817	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-44 is/are pending in the application.
- 4a) Of the above claim(s) 38-44 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-11, 19-24 and 32-34 is/are allowed.
- 6) ☒ Claim(s) 12-18, 25-31 and 35-37 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☒ Claim(s) 1-44 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-37, drawn to a system for processing an input signal, classified in class 330, subclass 149.
- II. Claims 38-44, drawn to a method of initializing phase correction, classified in class 327, subclass 2.

Inventions I and II are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct from each other if they are shown to be separately usable. In the instant case, invention II has separate utility such as initializing a phase correction in a postdistortion arrangement. See MPEP § 806.05(d).

Because these inventions are distinct for the reasons given above and the search required for Group II is not required for Group I, restriction for examination purposes as indicated is proper.

During a telephone conversation with Jason Fiorillo on September 15, 2004 a provisional election was made without traverse to prosecute the invention of Group I, claims 1-37. Affirmation of this election must be made by applicant in replying to this Office action. Claims 38-44 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

The disclosure is objected to because of the following informalities: in claim 1, line 9, "sued" should read --used--. Appropriate correction is required.

Claims 12-18,25-31 and 35-37 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 12 it is defined in step f1 that the replica of the input signal is delayed and in step f4 that the replica of the input signal is used to determine the predistortion; however, it appears from the disclosure that the delayed replica rather than the replica per se is used to determine the predistortion.

Claim 27 specifies "a delay subsystem for delaying said input signal" when it appears from the disclosure that it is a replica of the input signal that is delayed, not the input signal itself. (The input signal being the signal to which predistortion is applied as stated earlier in the claim).

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 27-28 and 31 are rejected under 35 U.S.C. 102(b) as being anticipated by Cavers.

Refer to fig. 1 of Cavers. A main amplifier A1 has the input signal to it predistorted in an adaptive fashion. Controller CT1 may be read as the determining means claimed as it will determine the predistortion provided by the adjuster CGA1 which may be read as the adjustment means claimed. The feedback network that results in line 100 being

fed to the controller may be read as the update means claimed since the outputs on lines 110,115 are incremented to achieve a lower value on line 100 in one embodiment (see col. 2, lines 9-16 of Cavers). Delay DL1 may be read as the delay subsystem as it provides a delayed input to the controller (via line 105 and coupler S3) and paths 25,45,90,100 with related couplers S2,C1,S4,S5 may be read as the feedback subsystem claimed. Regarding claim 28 CGA1 receives parameters from CT1 to cause predistortion of the input signal. Regarding claim 31, since the feedback network combines the delayed input and output of the main amplifier A1 the predistortion will be dependent thereon.

Claims 1-11,19-24 & 32-34 are allowed.

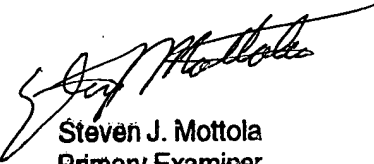
The prior art of record fails to disclose utilizing a delayed replica of the input signal to determine predistortion in the context of decomposing, separately processing and recombining the predistorted signal as claimed.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Leizerovich et al. disclose in fig. 6 a predistortion arrangement for a plural channel amplifier including a delay function applied to the input signal and a feedback of a replica of the output signal. However, a delayed replica of the input signal is not used to set the predistortion. Jeckeln discloses the use of a look up table to set predistortion parameters and feeds back a replica of the output signal and a delayed version of the predistorted signal to set the predistortion; a delayed replica of the input signal is not utilized.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven J. Mottola whose telephone number is 571-272-1766. The examiner can normally be reached on M-Th from 8 to 5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert J. Pascal, can be reached on 571-272-1769. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Steven J. Mottola
Primary Examiner